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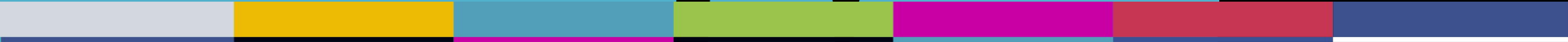
ALL DAY DEVOPS

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Once Upon A Time in Kubernetes Operator Land....

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Karthik Gaekwad

- Head of Cloud Native Engineering at Verica.
- Authored Learning Kubernetes and a many other cloudnative courses on LinkedIn learning.
- Built Oracle Managed Kubernetes Engine and Principal Developer Advocate for Oracle Cloud.
- Organizes: Devopsdays Austin, Cloud Austin, All Day Devops, Container Days.
- @iteration1 on twitter



VERICA



verica.io/book

Get Your Free Copy of Chaos Engineering: System Resiliency in Practice

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Casey Rosenthal

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Today...

- What are Kubernetes Operators
- Why Use Cases for Operators
- Demo (How To Operators)
- Conclusions

What are Operators?

- NOT the people who run or work with Kubernetes....





What are Operators?

- Kubernetes Software Pattern
- Create Custom Resources to manage applications and components.
- Part of the Kubernetes Control Loop, and allows you to extend the Kubernetes API





Operators v/s API v/s Helm

Why should I build an operator versus just using the Kubernetes Client API or Helm?

IF you...

- Need added control over the lifecycle of object creation, updating.
- Building an application to control/manage Kubernetes applications.
- Need to be able to access internal Kube components (inside out versus outside in)





Operator Examples

Chaos Engineering Verification

- Use an operator to run verifications.
- Read/Update/Delete Kubernetes resources (like pods)
- Finer control over resources in the cluster (timing, traffic shaping etc).
- Verification State Management while it's running.





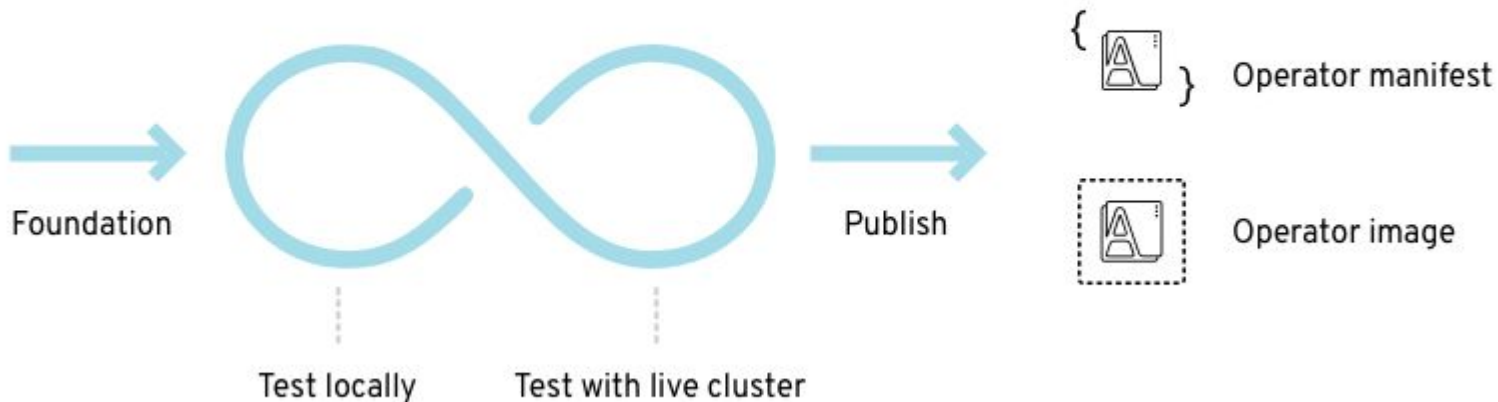
What Languages?

- Most Common:
 - Golang
 - Ansible
 - Helm
- Newer!
 - Java
 - <https://kubernetes.io/blog/2019/11/26/develop-a-kubernetes-controller-in-java/>
 - Python
 - <https://medium.com/swlh/building-a-kubernetes-operator-in-python-with-zalando-kopf-37c311d8edff>
 - Others?
 - Come talk to me after the talk- Interested to learn more

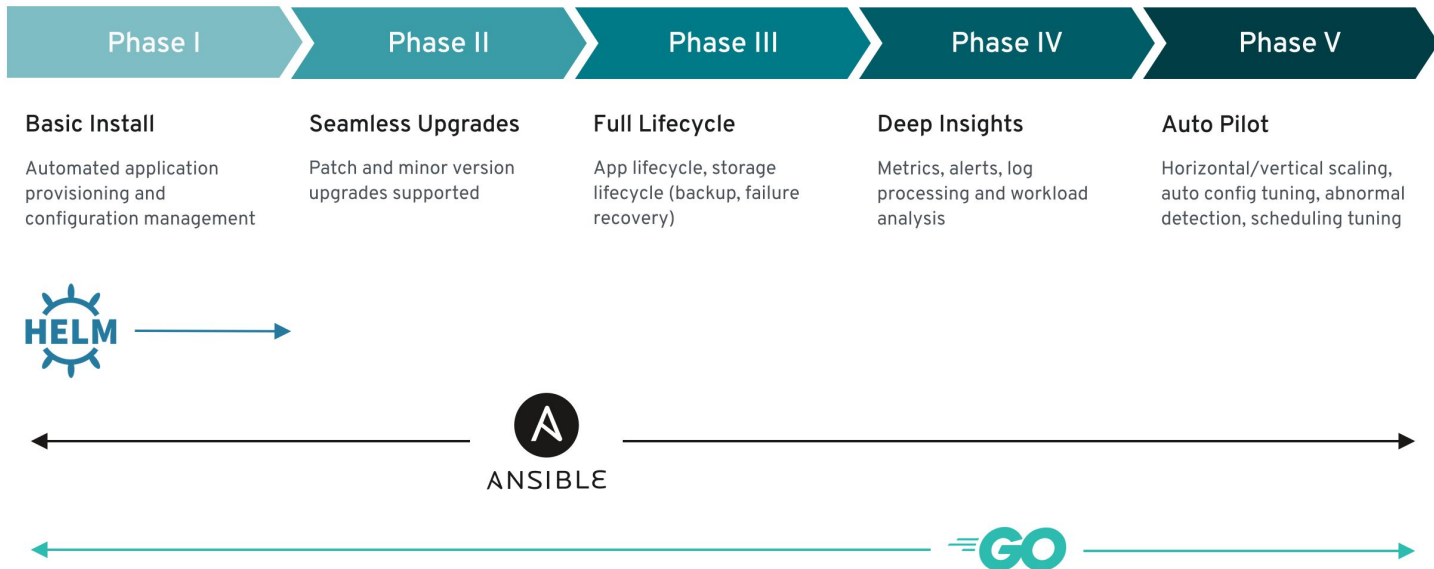


Development Lifecycle

Operator SDK *Build, test, iterate*



Maturity Model



Demo!





Docs and Community

- Community: <https://github.com/operator-framework/community-operators>
- Docs: <https://sdk.operatorframework.io/docs/>





Conclusions

- Operators allow you to build custom applications in a Kubernetes Cluster.
- Allows you to extend a Kubernetes Application
- What will you build?



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